

1. BUILDING AND DESIGN CODES

- A. 2018 INTERNATIONAL BUILDING CODE WITH MARYLAND AMENDMENTS
- B. ACS 360-16: SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (15TH EDITION STRUCTURAL STEEL MANUAL)
- C. AISI S100-16 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2016
- D. AWS STRUCTURAL WELDING CODE-SHEET STEEL, D1.3-2008.
- E. ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 2016 EDITION
- F. ACI DETAILING MANUAL, 2004
- G. STRUCTURAL WELDED WIRE REINFORCEMENT MANUAL OF STANDARD PRACTICE, WIRE REINFORCEMENT INSTITUTE, 2016.
- H. TMS402-16 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, 2016 EDITION
- I. TMS602-16 SPECIFICATIONS FOR MASONRY STRUCTURES, 2016
- J. CRSI MANUAL OF STANDARD PRACTICE, 2009.
2. DESIGN LOADS:
- A. LIVE LOADS: UNIFORM
- ROOF 20 PSF
- SLAB ON GRADE 100 PSF
- LIVE LOAD REDUCTION ON SUPPORTING ELEMENTS IN ACCORDANCE WITH, BUILDING CODE
- B. DEAD LOADS: 20 PSF
- ROOF DEAD LOAD
- C. WIND LOADS: V = 113 MPH (ULT) V = 88 MPH (ASD)
- 3 SECOND GUST WIND SPEED: C
- EXPOSURE: II
- RISK CATEGORY: ENCLOSED BUILDING
- ENCLOSURE CLASSIFICATION ± 0.18
- INTERNATIONAL PRESSURE COEFFICIENT
- FOR COMPONENTS AND CLADDING WIND PRESSURE RE: 3/5-101
- D. SEISMIC LOADS:
- SEISMIC IMPORTANCE FACTOR: 1.0
- OCCUPANCY CATEGORY: I
- Ss: SPECTRAL ACC FOR SHORT PERIOD = 0.121g
- Si: SPECTRAL ACC FOR 1 SECOND PERIOD = 0.042g
- SITE CLASS D
- Sds: DESIGN SPECTRAL ACC FOR SHORT PERIOD= 0.129g
- SD1: DESIGN SPECTRAL ACC FOR 1 SECOND PERIOD= 0.067g
- SEISMIC DESIGN CATEGORY A
- F_a = 1.6
- F_v = 2.4
- BASIC SEISMIC FORCE RESISTING SYSTEM: LIGHT FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
- DESIGN BASE SHEAR (ASD) = 3 KIPS
- C_s = 0.01
- R = 6.5
- SEISMIC DESIGN PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
- E. SNOW LOADS
- I: IMPORTANCE FACTOR = 1.0
- C_e: EXPOSURE FACTOR = 1.0
- C_r: THERMAL FACTOR = 1.0
- P_g = GROUND SNOW LOAD = 25 PSF
- P_f = 0.7 C_e C_t I P_g = 17.5 PSF
- P_f = 18.0 PSF + SNOW DRIFT RE: 3/5-101- LOAD CASE 1
- P_f = 20.0 PSF (MIN) - LOAD CASE 2
- P_f = (RAIN ON SNOW SURCHARGE NOT APPLICABLE) - LOAD CASE 3
- F. ADDITIONAL DESIGN LOADS (ASD) INDICATED ON STRUCTURAL DRAWINGS SHALL BE IDENTIFIED AS FOLLOWS:
- DL = DEAD LOAD
- LL = LIVE LOAD
- WL = WIND LOAD
- EL = SEISMIC LOAD
3. GENERAL REQUIREMENTS:
- A. SPECIFICATIONS ARE LISTED IN THE NOTES FOUND ON THIS SHEET. NO ADDITIONAL SPECIFICATION MANUAL IS INCLUDED FOR STRUCTURAL WORK.
- B. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK OR FABRICATING MATERIAL NOTIFY A/E OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE OF WORK.
- C. VERIFY THE LOCATION OF CHASES, INSERTS, OPENINGS, SLEEVES, FINISHES, DEPRESSIONS, PADS, AND WALL OPENINGS.
- D. DO NOT SCALE DRAWINGS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.
- E. DETAILS LABELED "TYPICAL DETAILS" ON DRAWINGS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED . SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION . NOTIFY ENGINEER OF CONFLICTS REGARDING APPLICABILITY OF "TYPICAL DETAILS".
- F. DO NOT LOAD THE SLAB ON GRADE OR SUPPORTED SLAB WITH ERECTION CRANES OR ERECTION EQUIPMENT. THE SLABS HAVE NOT BEEN DESIGNED FOR CRANE LOADS AND WILL REQUIRE AN INCREASE IN THICKNESS AND/OR REINFORCEMENT OBTAIN AND / APPROVAL ON PROPOSED CRANE SUPPORT PLAN FOR SLABS PRIOR TO COMMENCING WORK.
- G. DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON POURED OR ERECTED FLOORS/ROOFS IN EXCESS OF 80 PERCENT OF LIVE LOAD. GENERAL CONTRACTOR WILL ENSURE THAT ALL SUB-CONTRACTORS ARE INFORMED OF LOADING RESTRICTIONS.AVOID IMPACT WHEN PLACING MATERIALS ON POURED OR ERECTED FLOORS OR ROOF.
- H. THE CONTRACT STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION; INCLUDING BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS AND SCAFFOLDING, SHORING OF RETAINING WALLS AND OTHER TEMPORARY SUPPORTS AS REQUIRED. COMPLY WITH APPLICABLE REQUIREMENTS OF OSHA AND OTHER GOVERNING BODIES HAVING JURISDICTION AT THE SITE.
- I. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON DRAWINGS. EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND PROVIDE FOR REQUIRED OPENINGS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. VERIFY SIZE AND LOCATION OF OPENINGS WITH THE MECHANICAL CONTRACTOR. DEVIATIONS FROM THE STRUCTURAL DRAWINGS MUST BE APPROVED PRIOR TO IMPLEMENTING THE CHANGES.
- J. LOADINGS FOR MECHANICAL EQUIPMENT ARE BASED ON THE UNITS SHOWN ON THE MECHANICAL DRAWINGS. ANY CHANGES IN TYPE, SIZE, OR NUMBER OF PIECES OF EQUIPMENT SHALL BE REPORTED TO THE ARCHITECT FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE PLACEMENT OF SUCH EQUIPMENT.
- K. SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS NOT SHOWN AND FOR EXACT LOCATIONS OF ALL SLAB DEPRESSIONS. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL SECTIONS WITH ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL MEMBERS.
- L. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
- 1) SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED.
- 2) SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-LOAD BEARING PARTITIONS.
- 3) SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS SLOPES, INSERTS, ETC. EXCEPT AS SHOWN.
- 4) FLOOR AND ROOF FINISHES.
- 5) WATERPROOFING AND DAMPROOFING.
- 6) DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
- M. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
- 1) PIPE AND DUCT RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS ETC. EXCEPT AS SHOWN OR NOTED.
- 2) ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
- 3) CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
- 4) SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS MOTOR MOUNTS, EXCEPT AS SHOWN OR NOTED.
- N. ALL MECHANICAL SYSTEMS SUSPENDED LOADS EXCEEDING 100 # SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION UNLESS SPECIFICALLY DETAILED OR NOTED ON THE STRUCTURAL DRAWINGS.

1.FOUNDATION DESIGN IS BASED UPON THE GEOTECHNICAL ENGINEERING REPORT ENTITLED "GEOTECHNICAL ENGINEERING REPORT", PROPOSED PANDA EXPRESS (D6694) PRINCE FREDERICK, MARYLAND PREPARED BY TERRACON CONSULTANTS, INC DATED JANUARY, 2019

COORDINATE STRUCTURAL PLANS AND DETAILS WITH REQUIREMENTS OF GEOTECHNICAL REPORT. FOOTING DESIGN IS BASED ON A 2000 PSF NET ALLOWABLE SOILS PRESSURE.

2. CONTRACTOR SHALL TREAT SOIL BELOW SLAB FOR TERMITES.
3. REFER TO THE GEOTECHNICAL REPORT AND SPECIFICATIONS FOR GENERAL REQUIREMENTS OF EARTHWORK, OVEREXCAVATION, SUBGRADE PREPARATION, FILL AND COMPACTION, WATERPROOFING AND OTHER PERTINENT REQUIREMENTS AND INFORMATION. IF THERE IS A CONFLICT BETWEEN GEOTECHNICAL REPORT AND STRUCTURAL PLANS THEN THE MORE STRINGENT CRITERIA SHALL APPLY UNLESS OTHERWISE DIRECTED BY AN RFI.
4. PROTECT PIPES AND CONDUITS RUNNING THROUGH WALLS AND SLABS WITH 1/2 INCH EXHAUSTION MATERIAL. LOWER CONTINUOUS FOOTINGS AND GRADE BEAMS PERPENDICULAR TO PIPE RUNS TO ALLOW PIPES TO PASS ABOVE THE FOOTINGS OR THROUGH THE GRADE BEAMS. ALTERNATELY, PROVIDE A CONCRETE JACKET IF PIPES ARE LOW ENOUGH TO BE PLACED BELOW THE FOOTINGS AND GRADE BEAMS. LOWER FOOTINGS AND GRADE BEAMS PARALLEL TO PIPE RUNS TO AVOID SURCHARGE ONTO ADJACENT TRENCH EXCAVATIONS.
5. MAINTAIN SUBGRADE AND FILL MOISTURE CONTENT UNTIL FOUNDATIONS ARE PLACED.
6. ARRANGE FOR OWNER'S INDEPENDENT TESTING AGENCY TO MONITOR CUT AND FILL OPERATIONS AND PERFORM FIELD DENSITY AND MOISTURE CONTENT TESTS TO VERIFY COMPACTION AND APPROVE FOOTING SUBGRADES PRIOR TO PLACING CONCRETE.
7. DO NOT PLACE FOOTINGS OR SLABS AGAINST SUBGRADE CONTAINING FREE WATER, FROST, OR ICE.
8. MAINTAIN PROPER SITE DRAINAGE DURING CONSTRUCTION TO ENSURE SURFACE RUNOFF AWAY FROM STRUCTURES AND TO PREVENT PONDING OF SURFACE RUNOFF NEAR THE STRUCTURES.

- PROVIDE BATCH MIXING, TRANSPORTATION, PLACING AND CURING OF CONCRETE IN ACCORDANCE WITH RECOMMENDATIONS OF ACI 301 AND ACI 318. USE ASTM C 150 CEMENT UNLESS NOTED OTHERWISE. PROVIDE ADMIXTURES AND SPECIAL REQUIREMENTS AS SPECIFIED.
- A. ALL CONCRETE SHALL BE NORMAL WEIGHT (145 PCF) CONCRETE AND:
fc=3,500 PSI AT 28 DAYS FOR ALL CONCRETE
2. MINIMUM CEMENT CONTENT SHALL BE 470 LBS (5 SACKS) PER CUBIC YARD.
3. ASTM C618 CLASS C OR F FLY ASH MAY BE USED UP TO 20% OF TOTAL CEMENT CONTENT BY VOLUME. THIS IS ONLY FOR CONCRETE SPECIFIED IN THESE STRUCTURAL DRAWINGS. REFER TO SPECIFICATIONS BY OTHER DISCIPLINES.
4. MAXIMUM SLUMP SHALL BE 5 IN., U.N.O.
5. CONCRETE SLUMP TESTS SHALL BE MADE BEFORE AND AFTER THE ADDITION OF ADMIXTURES AND MAY BE TAKEN AT THE BACK OF THE TRUCK. CONCRETE FOR THE PREPARATION OF TEST CYLINDERS SHALL BE TAKEN FROM THE HOSE END FOR CONCRETE PLACED BY PUMP.
6. CONCRETE MIX SHALL NOT USE ANY ADMIXTURE WHICH CONTAINS CALCIUM CHLORIDE.
7. PREPARE AND SUBMIT MIXTURES FOR EACH CLASS OF CONCRETE ON THE BASIS OF LABORATORY TRIAL MIXTURES OR FIELD TEST DATA FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER
8. PROVIDE CONSTRUCTION AND CONTROL JOINTS AS INDICATED ON DRAWINGS. HORIZONTAL CONSTRUCTION JOINTS ARE NOT ALLOWED UNLESS SPECIFICALLY NOTED OR APPROVED BY STRUCTURAL ENGINEER. NOTIFY STRUCTURAL ENGINEER OF PROPOSED CONSTRUCTION JOINT OR CONTROL JOINT LOCATIONS THAT ARE DIFFERENT OR IN ADDITION TO JOINTS INDICATED ON DRAWINGS.
9. CHAMFER EXPOSED EDGES 3/4 INCH UNLESS OTHERWISE NOTED.
10. WIRE BRUSH AND CLEAN CONSTRUCTION JOINTS PRIOR TO POURING NEW CONCRETE.
11. REFERENCE THE APPROPRIATE DISCIPLINE DRAWINGS FOR SUBSLAB PIPING, FLOOR DRAINS AND SLAB AND WALL PENETRATIONS.
12. PROVIDE ADEQUATE STRUCTURAL FRAMING AS APPROVED BY STRUCTURAL ENGINEER FOR MECHANICAL OPENINGS THROUGH THE SLABS, WALLS AND FLOOR DECK. OPENINGS WILL NOT BE PERMITTED THROUGH BEAMS UNLESS SPECIFICALLY DETAILED.
13. ADMIXTURES:
 - A. AIR-ENTRAINING ADMIXTURE: ASTM C 260
 - B. WATER-REDUCING ADMIXTURE: ASTM C 494, TYPE A
 - C. RETARDING ADMIXTURE: ASTM C 494 TYPE B
 - D. ACCELERATING ADMIXTURE: ASTM C 494 TYPE C (NON CHLORIDE)
 - E. HIGH-RANGE, WATER REDUCING ADMIXTURE: ASTM C 494, TYPE F
 - F. OTHER ADMIXTURES FOR SPECIFIC USE WITH THE PERMISSION OF THE DESIGN PROFESSIONAL
 - G. WATER REDUCING AND ACCELERATING ADMIXTURE: ASTM C 494, TYPE E
 - H. WATER REDUCING AND RETARDING ADMIXTURE: ASTM C 494, TYPE D
14. COMPLY WITH RECOMMENDATIONS OF ACI 302.1R FOR SCREEDING, RESTRAINING AND FINISHING OPERATIONS FOR CONCRETE SURFACES. DO NOT WET CONCRETE.
 - A. INTERIOR GARAGE FLOOR SLABS: SMOOTH TROWEL FINISH
 - B. EXTERIOR SLABS: LIGHT FLEXIBLE BRISTLE BROOM FINISH
15. PROVIDE ACI "CLASS A" TOLERANCE, 1/8 INCH VARIATION IN 10 FEET. MEASURED WITH A STRAIGHT EDGE LAID IN ANY DIRECTION.
16. PROVIDE BATCH MIXING, TRANSPORTATION, PLACING AND CURING OF CONCRETE IN ACCORDANCE WITH RECOMMENDATIONS OF ACI 301 AND ACI 318. USE TYPE II OR TYPE V PORTLAND CEMENT UNLESS NOTED OTHERWISE. PROVIDE ADMIXTURES AND SPECIAL REQUIREMENTS AS SPECIFIED.
17. NO WATER SHALL BE ADDED TO THE CONCRETE AT THE JOBSITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE CONCRETE SUPPLIER TO ENSURE A PUMPABLE AND WORKABLE MIX WITHOUT THE ADDITION OF WATER AT THE JOBSITE. THE USE OF PLASTICIZERS, RETARDANTS, AND OTHER ADDITIVES SHALL BE AT THE DISCRETION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR THE PROPER USE OF ADDITIVES. THE USE OF CALCIUM CHLORIDE OR OTHER CHLORIDE BEARING SALTS SHALL NOT BE PERMITTED.

1. REINFORCED MASONRY WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES: ACI 530/ASCE 5/TMS 402.
2. REINFORCED MASONRY TO CONFORM TO THE SPECIFICATIONS FOR MASONRY STRUCTURES: ACI 530.1/ASCE 6/TMS 602 (WITH THE EXCEPTIONS NOTED IN JOB SPECIFICATIONS).
3. PROVIDE CONCRETE MASONRY UNITS (CMU) OF NORMAL WEIGHT (125 PCF MINIMUM), GRADE N, TYPE I OR II, CONFORMING TO LATEST EDITION OF ASTM C 90. LAY UNITS IN RUNNING BOND UNLESS OTHERWISE NOTED.
4. PROVIDE MASONRY ASSEMBLAGES WITH MASONRY PRISM STRENGTH (f_m) OF 1,500 PSI, TESTED IN ACCORDANCE WITH ASTM C 140.
5. PROVIDE CONCRETE MASONRY UNITS IN ACCORDANCE ASTM C 426 LIMITS FOR DRYING SHRINKAGE OF CONCRETE BLOCKS.
6. PROVIDE VERTICAL REINFORCEMENT IN CMU WALLS AS SHOWN IN DRAWINGS. FILL THE REINFORCED CELLS SOLID WITH GROUT. MAXIMUM HEIGHT OF GROUT POURS TO BE AS SPECIFIED ON THE DRAWINGS FOR MASONRY STRUCTURES TABLE NO. 7. UNTIL WALL IS PERMANENTLY BRACED BY ROOF.
7. LAY HOLLOW UNITS WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. PROVIDE FULL MORTAR COVERAGE FOR WEBS WHEN ADJACENT TO GROUTED CELLS.
8. ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE CONTINUOUS UNOBSTRUCTED VERTICAL CELLS. REMOVE OVERHANGING MORTAR OR OTHER OBSTRUCTION AND DEBRIS FROM THE SPECIFIED CELL WALLS. BRACE THE GROUT WITH 8 INCH SLUMP AND CONSOLIDATE BY MEANS OF HAND TAMPING TO ENSURE COMPLETE FILLING OF CELLS.

8. ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE CONTINUOUS UNOBSTRUCTED VERTICAL CELLS. REMOVE OVERHANGING MORTAR OR OTHER OBSTRUCTION AND DEBRIS FROM THE INSIDES OF CELL WALLS. PROVIDE GROUT WITH 8 INCH SLUMP AND CONSOLIDATE BY MEANS OF HAND TAMPING TO ENSURE COMPLETE FILLING OF CELLS.
9. INSTALL ANCHORS, ACCESSORIES, AND OTHER ITEMS TO BE BUILT IN AS WORK PROGRESSES
10. PERFORM CUTTING AND FITTING OF MASONRY WITH MASONRY SAWS PROVIDING CUT FINISHED UNITS.
11. CELLS AT OR BELOW FINISHED GRADE ARE TO BE GROUTED SOLID.
12. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL CORE, DO NOT SLOPE DOWEL MORE THAN ONE HORIZONTAL TO SIX VERTICAL.
13. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL WALL IS PERMANENTLY BRACED BY ROOF.
14. SPECIAL INSPECTION IS REQUIRED AS FOLLOWS:
 - A. DURING PREPARATION OF REQUIRED PRISMS OR TEST SPECIMENS.
 - B. DURING THE LAYING OF MASONRY UNITS.
 - C. DURING PLACEMENT OF REINFORCING STEEL.
 - D. FOR GROUT SPACINGS PRIOR TO CLOSING OF CLEANOUTS AND GROUTING.
 - E. DURING ALL GROUTING OPERATIONS.
15. FORWARD INSPECTION RESULTS TO THE ENGINEER OF RECORD.
16. GROUT FILL CORES SHALL CONFORM TO ASTM C478 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI IN 28 DAYS.
 - A. MASONRY BELOW GRADE: TYPE M MORTAR
 - B. EXTERIOR ABOVE GRADE MASONRY: TYPE S MORTAR
17. GALVANIZED HORIZONTAL REINFORCEMENT SHALL HAVE, 9 GAGE SIDE AND CROSS RODS SPACED 16" ON CENTER. LAP REINFORCEMENT 7".

1. PROVIDE DETAILING, FABRICATION, AND INSTALLATION OF REINFORCING AND ACCESSORIES IN ACCORDANCE WITH ACI 315 AND ACI 318.
2. PROVIDE NEW BILLET STEEL REINFORCING BARS IN ACCORDANCE WITH ASTM A 615, GRADE 60 DEFORMED.
3. COORDINATE PLACEMENT OF CAST-IN-PLACE EMBEDS AND ANCHOR RODS. SET ANCHOR RODS WITH A TEMPLATE. SECURELY ATTACH EMBED ITEMS TO FORMWORK OR REINFORCING.
4. PROVIDE CLASS "B" REINFORCEMENT SPLICES FOR CONTINUOUS REINFORCEMENT. PROVIDE STANDARD 90-DEGREE HOOKS IN ACCORDANCE WITH ACI 318, UNLESS OTHERWISE NOTED.
5. MAINTAIN THE FOLLOWING CONCRETE COVERAGE FOR REINFORCING STEEL UNLESS OTHERWISE NOTED:
 - A. CONCRETE CAST AGAINST EARTH: 3 INCHES
 - B. CONCRETE EXPOSED TO WEATHER
 - NO. 8 AND LARGER: 2 INCHES
 - NO. 5 AND SMALLER: 1 1/2 INCHES
 - C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND: SLABS AND WALLS
 - NO. 14 AND NO. 18: 1 1/2 INCHES
 - NO. 11 AND SMALLER: 3/4 INCHES
6. DO NOT WELD OR BEND REINFORCEMENT IN THE FIELD UNLESS SPECIFICALLY SHOWN OR APPROVED BY STRUCTURAL ENGINEER.
7. WHEN SPECIFICALLY APPROVED, PROVIDE WELDED REINFORCEMENT IN ACCORDANCE WITH ASTM A 408 GRADE 60, USE LOW HYDROGEN ELECTRODES FOR WELDING OF REINFORCEMENT IN CONFORMANCE WITH RECOMMENDED PRACTICES FOR WELDING REINFORCING STEEL, AMERICAN WELDING SOCIETY, AWS D12.1. PROVIDE ASTM GRADE 40 REINFORCING BARS WHERE DETAILED BARS ARE TO BE WELDED TO A STEEL SECTION.
8. WHERE REQUIRED, PROVIDE DOWELS TO MATCH SIZE AND SPACING OF MAIN REINFORCING.
9. PROVIDE CONTINUOUS HORIZONTAL WALL REINFORCEMENT WITH 90-DEGREE BENDS AND EXTENSIONS AT CORNERS AND INTERSECTIONS AS SHOWN ON TYPICAL BAR PLACING DETAILS.
10. WHEN SHOWN ON DRAWINGS PROVIDE FIBRILLATED POLYPROPYLENE FIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE COMPLYING WITH ASTM C1116, TYPE III, 1/2 TO 1 1/2 INCHES LONG.

1. EXCEPT WHERE NOTED ON DRAWINGS, USE WWW.STRONGTIE.COM FOR ADDITIONAL PRODUCT DATA. IT IS ACCEPTABLE TO USE THE SIMPSON SET-XP ADHESIVE SYSTEM OR APPROVED EQUAL (TYP., U.N.O.) ICC ESR-2508.
2. EXCEPT WHERE INDICATED ON THE DRAWINGS, HILT PRODUCTS MAY BE USED. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.
3. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED OR SUBMITTED BY METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR THE USES, LOADS, AND ENVIRONMENTAL CONDITIONS. THE QUALITY AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
4. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
5. IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS, THREADED ROD AND REBAR DIAMETERS AND EMBEDMENT LENGTHS SHALL BE, AS NOTED ON DRAWINGS.
6. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING PRODUCTS WHICH HAVE SPECIFIC APPLICATIONS THAT ARE INTENDED FOR OVERHEAD USE.
7. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL, WHO INSTALL ANCHORS ARE TRAINED TO THE COMMITMENT OF INSTALLING ANCHORS AND SHOWN.
8. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
9. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF THE ANCHORS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.

1. ALL STEEL STUD SIZES SHALL BE AS NOTED ON THE DRAWINGS, CONFORMING TO A554 STANDARD, BRACING AND TENSILE AND TO A558 STANDARD FOR SHEAR. FABRICATOR SHALL SUPPLY ALL CLIPS, FASTENERS, STUDS, ACCESSORIES, STANDARD BRACING, ETC.
2. ALL STEEL STUDS SHALL HAVE A MINIMUM 1 5/8" FLANGE WITH A 1/2" RETURN (U.N.O.)
3. ALL STUDS 43 MIL (18 GAGE) AND THINNER SHALL HAVE A MINIMUM YIELD STRENGTH, F_y, OF 43,000 P.S.I. (18 GAGE) AND THICKER SHALL HAVE A MINIMUM YIELD STRENGTH, F_y, OF 50,000 P.S.I. (16 GAGE) AND THICKER SHALL HAVE A MINIMUM YIELD STRENGTH OF 50,000 AND TENSILE STRENGTH OF 65,000 P.S.I.
4. TRACK SECTIONS SHALL BE EQUAL GRADE AND GAGE. THICKNESS OF STUDS BEING USED. TYPE OF FASTENERS SHALL BE SELF-TAPPING NO. 12-14 GAGE SCREWS, OR WELD IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY'S "STRUCTURAL WELDING CODE - SHEET STEEL" (AWSD) ON DRAWINGS.

1. WOOD FRAMING SHALL COMPLY WITH THE SOUTHERN PINE INSPECTION BUREAU, OR SHALL CONFORM TO SPECIFICATIONS AS PUBLISHED BY THE WESTERN WOODS PRODUCTS ASSOCIATION.
2. WOOD FRAMING 2 INCHES X 4 INCHES AND LARGER SHALL BE NO. 2 SOUTHERN PINE, NO. 2 LARCH, OR EQUIVALENT.
3. WOOD COLUMNS 6 INCHES X 6 INCHES AND LARGER SHALL BE NO. 1 SOUTHERN PINE, NO. 1 LARCH, OR EQUIVALENT.
4. ALL EXPOSED WOOD RAFTERS AND COLUMNS SHALL BE "SELECT" GRADE AS DESCRIBED IN ITEM 1. ALL EXPOSED WOOD CONCRETE OR MASONRY SHALL BE PRESSURE TREATED (USE C-1 AS SPECIFIED BY AWWA) FOR MOISTURE PROTECTION. ALL WOOD EXPOSED TO WEATHER SHALL BE PRESSURE TREATED (USE CATEGORY 3B AS SPECIFIED BY AWWA) OR WESTERN RED CEDAR.
5. GULLED-LAMINATED MEMBERS SHALL BE DOUGLAS FIR INDUSTRIAL GRADE (24F-18) OR APPROXIMATELY EQUIVALENT WESTERN SPECIES. GRADE 24F-18 OR APPROXIMATELY EQUIVALENT SHALL BE SUBSTITUTED FOR SIMPLY SUPPORTED SPANS ONLY.

7. PRE-FABRICATED METAL PLATED WOOD TRUSSES

A. TRUSS FABRICATION AND INSTALLATION SHALL COMPLY WITH THE FOLLOWING STANDARDS:

1. ANS/TPI 1 "NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION".
2. TPI HIB "COMMENTARY AND RECOMMENDATIONS FOR HANDLING INSTALLING & BRACING METAL PLATE CONNECTED WOOD TRUSSES".
3. TPI DSB "RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES".

B. TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS:

1. TOP CHORD: LIVE LOAD =20 PSF UNIFORM OR SNOW LOAD
DEAD LOAD =10 PSF

SNOW LOADS—PER LOAD CASES 1 TO 3 UNDER GENERAL NOTES, DESIGN LOADS SNOW
LOADS NOTE 2E THIS SHEET

2. BOTTOM CHORD: LIVE LOAD =5 PSF (NON-CONCURRENT)
DEAD LOAD =10 PSF
3. REFERENCE ROOF PLAN SHT S-101 FOR ADDITIONAL MECHANICAL EQUIPMENT LOADS.
4. REFERENCE ROOF PLAN SHT S-101 FOR ADDITIONAL LOADS FROM HANGING SOFFITS.
5. REQUIRED UPLIFT REFERENCE LOAD DIAGRAM DETAILS – DETAIL 3 ON S-101
- C. ALL TRUSS-TO-TRUSS AND TRUSS FRAMING CONNECTORS SHALL BE SPECIFIED AND DESIGNED BY THE TRUSS MANUFACTURER.
- D. BOTTOM CHORD TENSION SPLICES ARE PROHIBITED WITHIN THE MIDDLE 1/3 OF THE SPAN.
- E. FABRICATE, SUPPLY AND ERECT WORK TRUSSES AS SHOWN ON THE DRAWINGS AND AS SPECIFIED. WORK TO INCLUDE ANCHORAGE, BLOCKING, CURBING, MISCELLANEOUS INCIDENTAL FRAMING AND CONSTRUCTION AND PERMANENT BRACING
- F. FABRICATOR SHALL DESIGN AND FURNISH ALL TRUSS TO TRUSS HANGERS AND CONNECTIONS HARDWARE INCLUDING INSTALLATION INFORMATION
- G. ALL LOADS SHALL BE LOCATED AT TRUSS TOP OR BOTTOM CHORD PANEL POINTS
- H. COORDINATE SIZE AND LOCATIONS FOR MECHANICAL AND ELECTRICAL DUCTWORK PRIOR TO CONSTRUCTION
- I. MAXIMUM ALLOWABLE LIVE LOAD DEFLECTION (UNLESS OTHERWISE NOTED ON PLAN) ROOF TRUSSES – SPAN/360
- J. OPENINGS IN ROOF TO BE DESIGNED/FRAMED BY THE TRUSS SUPPLIER
- K. VERIFY BEARING CONDITIONS PRIOR TO TRUSS FABRICATION
- L. BRACING BRIDGING, WEB STIFFENERS, ETC. AS REQUIRED
- M. FABRICATOR SHALL SUBMIT SHOP DRAWINGS SHOWING LAYOUT OF MEMBERS, BRIDGING, BRACING, ERECTION DETAILS, TRUSS PENETRATIONS, AND DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER IN THE STATE OF MICHIGAN. SUBMITTALS WHICH DO NOT INCLUDE THE ABOVE INFORMATION WILL BE RETURNED TO THE CONTRACTOR PRIOR TO REVIEW
8. ROOF DECK
 - A. ALL ROOF DECK SHALL BE APA STRUCTURAL 1 GRADE EXTERIOR PLYWOOD OR ORIENTED STRAND BOARD, CONFORMING TO GROUP 1 OF TABLE 1 OF APA PANEL DESIGN SPECIFICATION
 - B. ROOF SHEATHING SHALL BE $\frac{23}{32}$ INCH THICK MINIMUM (48/24) U.N.O.
 - C. STAGGER EDGES OF SHEETS
 - D. PROVIDE BLOCKING AT EDGES OF ALL ROOF SHEETS.
 - E. NAIL EDGES OF ROOF SHEETS AT 4 IN. O.C. MAXIMUM (U.N.O.).
 - F. NAIL FACES OF ROOF SHEETS AT 12 IN. O.C. MAXIMUM.
 - G. USE MINIMUM 10d COMMON NAILS (U.N.O.).
9. WALL SHEATHING
 - A. ALL WALL SHEATHING SHALL BE APA STRUCTURAL 1 GRADE EXTERIOR PLYWOOD OR ORIENTED STRAND BOARD, CONFORMING TO GROUP 1 OF TABLE 1 OF APA PANEL DESIGN SPECIFICATION
 - B. WALL SHEATHING SHALL BE $\frac{19}{32}$ INCH THICK MINIMUM (32/16) U.N.O.
 - C. STAGGER EDGES OF SHEETS.
 - D. PROVIDE BLOCKING AT EDGES OF ALL SHEARWALL SHEETS.
 - E. NAIL EDGES OF SHEARWALL SHEETS PER SCHEDULE ON SHEET S-100 (OTHER WALLS AT 6 IN. O.C. MAXIMUM).
 - F. NAIL FACES OF WALL SHEETS AT 12 IN. O.C. MAXIMUM.
 - G. USE MINIMUM 10d COMMON NAILS (U.N.O.).
10. CONNECTORS SHALL BE AS MANUFACTURED BY THE SIMPSON CO. OR APPROVED EQUAL CONNECTORS USED WITH PRESSURE TREATED LUMBER OR IN UNCONDITIONED SPACE, SHALL HAVE THE ZMAX (6185) COATING.
11. NAILING, UNLESS NOTED OTHERWISE, SHALL BE PER THE 2018 INTERNATIONAL BUILDING CODE.
TABLE 2304.10.1

CONNECTION	FASTENING (1)	LOCATION
JOIST TO SILL OR GIRDER	3-8d COMMON 3-3"x 0.131" NAILS	TOE NAIL
BRIDGING TO JOIST	2-8d COMMON 3-3"x 0.131" NAILS	TOE NAIL AT EA END
SILL PLATE TO JOIST OR BLOCKING	16d BOX \odot 16" O.C. 3"x 0.131" \odot 8" O.C.	FACENAIL
TOP PLATE TO STUD, END NAIL	2-16d COMMON 3-3"x 0.131" NAILS	END NAIL
STUD TO SILL PLATE	4-8d COMMON 4-3"x 0.131" NAILS	TOE NAIL
	2-16d COMMON 3-3"x 0.131" NAILS	END NAIL
DOUBLE STUD	16d BOX \odot 16" O.C. 3"x 0.131" \odot 8" O.C.	FACENAIL
DOUBLE TOP PLATES	16d BOX \odot 24" O.C. 3"x 0.131" \odot 12" O.C.	TYP FACENAIL
	8-16d COMMON 12-3"x 0.131" NAILS	LAP SPLICE
BLK'S BTWN JOISTS OR RAFTERS TO TOP PLATE	3-8d COMMON 3-3"x 0.131" NAILS	TOE NAIL
RIM JOIST TO TOP PLATES	8d COMMON \odot 6" OC 3"x 0.131" NAILS \odot 6" OC	TOE NAIL
TOP PLATES LAPS AND INTERSECTIONS	2-16d COMMON 3-3"x 0.131" NAILS	FACENAIL
CONTINUOUS HEADER, TWO PIECES	16d COMMON \odot 16" OC	ALONG EA EDGE
CEILING JOISTS TO PLATE	3-8d COMMON 5-3"x 0.131" NAILS	TOE NAIL
CONTINUOUS HEADER TO STUD	4-8d COMMON	TOE NAIL
CEILING JOISTS, LAPS OVER PARTITIONS	3-16d COMMON 4-3"x 0.131" NAILS	FACENAIL
CEILING JOISTS PARALLEL RAFTERS	3-16d COMMON 4-3"x 0.131" NAILS	FACENAIL
RAFTER TO PLATE	3-8d COMMON 3-3"x 0.131" NAILS	TOE NAIL
BUILT-UP CORNER STUDS	16d COMMON \odot 24" OC 3"x 0.131" NAILS \odot 16" OC	
BUILT-UP GIRDER BEAMS	20d COMMON \odot 32" OC 3-3"x 0.131" NAILS \odot 24" OC	TOE NAIL T&B \odot STAGGD
	2-20d COMMON 3-3"x 0.131" NAILS	FACENAIL AT ENDS \odot AT SPLICE

1.) NAIL SIZES ARE AS FOLLOWS:

8d COMMON = 2 1/2" x 0.131"
10d COMMON = 3" x 0.148"
16d COMMON = 3 1/2" x 0.162"
20d COMMON = 4" x 0.192"
16d BOX = 3 1/2" x 0.135"

ALL SILL PLATE NAILS OF SHEAR WALLS AND PLYWOOD NAILS SHALL BE COMMON NAILS UON



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STRUCTURAL NOTES AND SPECIAL INSPECTIONS

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